

Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1. (Currently Amended) A microcellular polyurethane foam obtained by reacting:
(i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed from a dimer fatty acid and/or dimer fatty diol;

(ii) a hydroxy compound consisting of a second polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol and/or dimer fatty diol; and

(iii) a chain extender composition;

wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters ~~polyester~~ have a trimer content between 5 and 15 weight percent, and wherein said foam retains at least 40% of its initial tensile strength after being subjected to hydrolysis for 2 weeks, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

2. (Cancelled)

3. (Currently Amended) A foam according to claim 1 wherein each of said first and second polyesters ~~polyester~~ is additionally formed from a non-dimer dicarboxylic acid.

4. (Previously Presented) A foam according to claim 3 wherein the non-dimer dicarboxylic acid comprises adipic acid.

5. (Currently Amended) A foam according to claim 1 wherein the chain extender composition is a diol having an aliphatic linear carbon chain comprising in the range from 1 to 10, ~~more preferably 3 to 5 carbon atoms.~~

6. (Previously Presented) A foam according to claim 1 wherein the foam retains at least 60% of its initial tensile strength and/or initial elongation at break properties, after being subjected to hydrolysis for 2 weeks.

7. (Currently Amended) A foam according to claim 1 wherein the foam retains at least 20% of its initial tensile strength and/or retains at least 30% ~~[[]]~~ of its initial elongation at break properties, after being subjected to hydrolysis for 4 weeks.

8. (Currently Amended) A foam according to claim 1 wherein the foam has a ~~density in the range from 0.25 to 0.7 gcm⁻³, and/or a~~ hardness in the range from 20 to 60 Shore A, and/or a tensile strength in the range from 35 to 80 kgcm⁻², and/or an elongation at break of greater than 250%, and/or a tear strength in the range from 2 to 8 kNm⁻¹, and/or an impact resilience in the range from 10 to 35%.

9. (Previously Presented) An isocyanate-terminated prepolymer which is the product of a reaction consisting essentially of a polyisocyanate and a polyester which is the reaction product of dimer fatty acid, adipic acid and diethylene glycol.

10. (Currently Amended) A shoe sole comprising a microcellular polyurethane foam obtained by reacting:

(i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed from a dimer fatty acid and/or dimer fatty diol;

(ii) a hydroxy compound consisting of a second polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol and/or dimer fatty diol; and

(iii) a chain extender composition;

wherein said foam retains at least 40% of its initial tensile strength after being subjected to hydrolysis for 2 weeks, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

11. (Currently Amended) A process for forming a microcellular polyurethane foam ~~wherein said foam retains at least 40% of its initial tensile strength after being subjected to hydrolysis for 2 weeks~~ comprising reacting:

- (i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~;
- (ii) a hydroxy compound consisting of a second polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~; and
- (iii) a chain extender composition,

wherein said foam retains at least 40% of its initial tensile strength after being subjected to hydrolysis for 2 weeks, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

12. (Currently Amended) The process according to claim 11 wherein each of said first and second polyesters ~~polyester~~ is additionally formed from a non-dimer dicarboxylic acid.

13. (Previously Presented) The process according to claim 12 wherein the non-dimer dicarboxylic acid comprises adipic acid.

14. (Currently Amended) The process according to claim 11 wherein the chain extender composition is a diol having an aliphatic linear carbon chain comprising in the range from 1 to 10, ~~more preferably 3 to 5 carbon atoms.~~

15. (Currently Amended) The process according to claim 11 wherein the foam retains at least 60%, ~~preferably at least 80%~~, of its initial tensile strength and/or initial elongation at break properties, after being subjected to hydrolysis for 2 weeks.

16. (Currently Amended) The process according to claim 11 wherein the foam retains at least 20%, ~~preferably at least 30%~~, of its initial tensile strength and/or

retains at least 30%, ~~preferably at least 50%~~ of its initial elongation at break properties, after being subjected to hydrolysis for 4 weeks.

17. (Currently Amended) The process according to claim 11 wherein the foam has ~~a density in the range from 0.25 to 0.7 gcm⁻³, and/or~~ a hardness in the range from 20 to 60 Shore A, and/or a tensile strength in the range from 35 to 80 kgcm⁻², and/or an elongation at break of greater than 250%, and/or a tear strength in the range from 2 to 8 kNm⁻¹, and/or an impact resilience in the range from 10 to 35%.

18. (Previously Presented) A foam according to claim 1 wherein said foam retains at least 60% of its initial tensile strength after being subjected to hydrolysis for 2 weeks.

19. (Previously Presented) A foam according to claim 1 wherein said foam retains at least 80% of its initial tensile strength after being subjected to hydrolysis for 2 weeks.

20. (Previously Presented) A foam according to claim 3 wherein the weight ratio of dimer fatty acids to non-dimer acids is in the range from 30 to 70:30 to 70 of the total dicarboxylic acids.

21. (Previously Presented) A foam according to claim 6 wherein the foam retains at least 80% of its initial tensile strength and/or initial elongation at break properties, after being subjected to hydrolysis for 2 weeks.

22. (Previously Presented) A process according to claim 12 wherein the weight ratio of dimer fatty acids to non-dimer acids is in the range from 30 to 70:30 to 70 of the total dicarboxylic acids.

23. (Currently Amended) A microcellular polyurethane foam obtained by reacting:
(i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~;

(ii) a hydroxy compound consisting of a second polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~; and

(iii) a chain extender composition;

wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters ~~polyester~~ have a trimer content between 5 and 15 weight percent, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

24. (Currently Amended) A foam according to claim 23 wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters ~~polyester~~ have a trimer content between 7 and 13 weight percent.

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Currently Amended) A microcellular polyurethane foam obtained by reacting:

(i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~;

(ii) a hydroxy compound consisting of a second polyester formed from at least a dimer fatty acid, a dimer fatty diol, or both a dimer fatty acid and a dimer fatty diol ~~and/or dimer fatty diol~~; and

(iii) a chain extender composition comprising a compound having at least 2 active hydrogen groups;

wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters ~~polyester~~ have a trimer content between 5 and 15 weight percent, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

29. (Currently Amended) A foam according to claim 28 wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters polyester have a trimer content between 7 and 13 weight percent.

30. (Previously Presented) A foam according to claim 28 wherein said polyesters are obtained by reacting dimer fatty acid with diethylene glycol.

31. (Currently Amended) A foam according to claim 28 wherein each of said first and second polyesters are obtained by reacting essentially linear dicarboxylic acids having a carbon chain in the range 2 to 20, dimer fatty acid and diethylene glycol.

32. (Currently Amended) A foam according to claim 28 wherein each of said first and second polyesters are obtained by reacting essentially adipic acid, dimer fatty acid and diethylene glycol.

33. (Currently Amended) A microcellular polyurethane foam obtained by reacting:
(i) an isocyanate-terminated prepolymer obtained by reacting a polyisocyanate with a first polyester formed by reacting essentially adipic acid, dimer fatty acid and diethylene glycol;

(ii) a hydroxy compound consisting of a second polyester formed by reacting essentially adipic acid, dimer fatty acid and diethylene glycol; and

(iii) a chain extender composition comprising a compound having at least 2 active hydrogen groups;

wherein said dimer fatty acids in each of said first and second polyesters polyester have a trimer content between 7 and 13 weight percent, and wherein said foam has a density in the range from 0.35 to 0.9 gcm⁻³, a tensile strength greater than 30 kgcm⁻², an elongation at break of greater than 200%, a tear strength greater than 1.2 kNm⁻¹, and an impact resilience less than 45%.

34. (Previously Presented) A foam according to claim 1 wherein the foam retains at least 30% of its initial tensile strength and/or retains at least 50% of its initial elongation at break properties, after being subjected to hydrolysis for 4 weeks.

35. (Currently Amended) A foam according to claim 1 wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters polyester have a trimer content between 7 and 13 weight percent.

36. (Currently Amended) A foam according to claim 1 wherein said dimer fatty acids and/or dimer fatty diols in each of said first and second polyesters polyester have a trimer content between 9 and 11 weight percent.

37. (Previously Presented) The microcellular polyurethane foam of claim 1, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

38. (Previously Presented) The shoe sole of claim 10, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

39. (Previously Presented) The process of claim 11, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

40. (Previously Presented) The microcellular polyurethane foam of claim 23, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

41. (Previously Presented) The microcellular polyurethane foam of claim 28, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

42. (Previously Presented) The microcellular polyurethane foam of claim 33, wherein the chain extender composition contains one or more of blowing agents, urethane promoting catalysts; surfactants; stabilizers; and pigments.

43. (New) The microcellular polyurethane foam of claim 1, wherein the foam has a density in the range from 0.37 to 0.9 gcm⁻³.